

CONTRACT CHANGE ORDER

Change Requested by: Engineer

CCO: 77 Suppl. No. 0 Contract No. 04 – 0120F4 Road SF-80-13.2/13.9 FED. AID LOC.:

To: **AMERICAN BRIDGE/FLUOR ENTERPRISES INC A JOINT VENTURE**

You are directed to make the following changes from the plans and specifications or do the following described work not included in the plans and specifications for this contract. **NOTE: This change order is not effective until approved by the Engineer.**

Description of work to be done, estimate of quantities and prices to be paid. (Segregate between additional work at contract price, agreed price and force account.) Unless otherwise stated, rates for rental of equipment cover only such time as equipment is actually used and no allowance will be made for idle time. This last percentage shown is the net accumulated increase or decrease from the original quantity in the Engineer's Estimate

This change order provides Quality Assurance (QA) improvements for the Orthotropic Box Girder (OBG), and Tower assemblies. Quality Assurance shall be improved by increasing welding report requirements and by implementing a Quality Assurance database along with a physical tagging procedure (green tagging procedure) for fabricated assemblies. The tagging procedure, in conjunction with the database system, establishes a process that tracks, verifies, and documents incremental progress for fabricated sub-assemblies and assembly stages.

Extra Work at Agreed Unit Price:

Input the following information into the QA database:

No.	Description	No.	Description	No.	Description
1	OBG or Tower	14	Joint Type	27	MT Acceptance Date
2	Lift	15	(Item Deleted)	28	Name of MT Level II
3	Segment	16	Filler Metal	29	Date of UT
4	Assembly	17	Date Welding Started	30	UT Result
5	Sub-Assembly	18	Date Welding Completed	31	Length of UT Defects
6	Plate Number	19	Date of VT	32	UT Acceptance Date
7	Weld ID	20	VT Result	33	Name of UT Level II
8	Total Weld Length	21	Length of VT Defects	34	Date of RT
9	Length of Defect	22	VT Acceptance Date	35	RT Result
10	Repair Report (Summarize)	23	Name of VT CWI	36	Length of RT Defects
11	Welder ID	24	Date of MT	37	RT Acceptance Date
12	Weld Process	25	MT Result	38	Name of RT Level II
13	Weld Position	26	Length of MT Defects		

The above listed input information is required per Special Provisions section 8-3.01 Welding and the Welding Quality Control Plan (WQCP), with the exception of "Item No. 8 - Total Weld Length" and summarization required to input "Item No. 10 - Repair Report." Update the Quality Assurance Database (QAD) daily with the latest information listed above.

Implement the following Quality Assurance Procedure (Green Tagging) for the Tower and Orthotropic Box Girders (OBG):

1. Purpose

1.1 This written procedure establishes the guidelines that shall be followed for In-Process and final Quality Assurance Acceptance of components on the SFOBB Project including the following

- 1.1.1. Production planning and scheduling
- 1.1.2. Documentation verification
- 1.1.3. Approval request notification

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2. References

2.1. The following documents shall be used as guidelines for developing this written procedure:

- 2.1.1. QA Approval form
- 2.1.2. Fabricators Welding Reports
- 2.1.3. Welding Report Summary Log
- 2.1.4. Quality Assurance Acceptance package
- 2.1.5. SFOBB Status tags

2.2. This procedure is intended to provide a uniform procedure for all Quality Assurance (QA) and Quality Control (QC) personnel representing the Fabricator, the Contractor, and the Department. A team consisting of members from all parties shall be established to execute the In-Process inspection verification of components.

2.3. The In-Process inspection verification team shall have the authority to adopt necessary processes required to facilitate and expedite the acceptance described in this procedure.

3. Production Planning and Scheduling

3.1. The Contractor's Fabrication Manager shall be the person designated for the responsibility of production planning and scheduling.

3.2. Prior to submitting components for formal acceptance the Contractor shall implement In-Process verification that shall include the following:

- 3.2.1. The yellow In-Process tag (figure 1) shall be affixed to the component, by the Contractor's representative, before part is moved from welding station. The yellow tag shall document that the items listed below have been completed.
- 3.2.2. All contract required non-destructive examination (NDE) has been performed and is documented on the component as being acceptable.
- 3.2.3. All contract required visual inspections have been performed and is documented on the component as being acceptable.
- 3.2.4. All critical and non-critical weld repairs have been completed and re-inspected by the original method of inspection and are documented on the component as being acceptable.
- 3.2.5. All Heat Straightening Request and Internal Heat Straightening Reports have been completed and the affected welds inspected by the appropriate NDT method.
- 3.2.6. All Non-conformance reports issued by the Fabricator, Contractor, or Department for material and/or workmanship have been corrected.
- 3.2.7. All contract required dimensional inspections have been performed and found to be acceptable as part of the dimensional control plan.
- 3.2.8. Upon completion of welding, NDT and dimensional inspections the team described in section 2.2 shall mutually agree upon the status of the component and complete the yellow In-Process tag by initialing in the appropriate area.
- 3.2.9. If the specified inspection method is not applicable, the inspector shall write NA.
- 3.2.10. Tag numbers shall be issued and controlled by the Contractor's Quality Control Manager QCM.
- 3.2.11. Upon this mutual agreement, the team described in section 2.2 shall indicate acceptance of the In-Process verification on the QA Approval form (Figure 4). The Contractor shall submit the QA Approval form to the QCM for document verification as described in section 4 of this procedure.
- 3.2.12. After QA approval the yellow In-Process tag may be removed. The green Accept tag (figure 2) shall be placed by the QCM or designated representative.
- 3.2.13. Store components in accordance with approved Fabrication Procedure and the Contract Provisions.

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3.3. The QA Approval form shall include the weld joint number (s) requesting approval, subassembly number, assembly number, grade and date. The QA Approval form shall be issued for the following subassemblies:

1) OBG

- a. Bottom plates before assembly into three-panel unit.
- b. Side Plates before assembly into three panel unit or corner assembly.
- c. Edge Plates before assembly into corner assembly.
- d. Deck Plates before assembly into three panel unit and installation of diaphragms or Corner assembly.
- e. Longitudinal Diaphragms before segment assembly.
- f. Floor beams before segment assembly. Applicable to FL-1, FL-2, FL-3, and whole unit assemblies.
- g. All three panel assemblies before they go into segment assembly and super panels.
- h. Corner assemblies.
- i. Segment assembly before painting and lift assembly.
- j. Lift assembly and painting before loading onto ship.

2) Tower

- a. Diaphragms before assembly into tower shaft.
- b. Skin plates before stiffeners are welded onto it.
- c. Skin plates with stiffeners before assembly into tower shaft.
- d. Tower shaft assembly before painting.
- e. Lift assembly and painting before loading onto ship.

3) Crossbeams

- a. Bottom plates before assembly.
- b. Side Plates before assembly.
- c. Deck Plates before assembly.
- d. Crossbeam assembly and painting before loading onto ship including matching to OBG.

4) Counterweights before installation onto the OBG or prior to shipping.

5) Suspender bracket before installation onto the OBG.

6) Bike Path brackets before shipping.

7) Bike Path prior to shipping.

8) Barrier prior to shipping.

9) Tower struts prior to shipping.

10) Cross Braces before shipping.

11) Other Sub-assemblies as directed by the Engineer.

3.4. A red Outstanding Repair tag (figure 3) shall be affixed near the yellow tag when any HSR, CWR or NCR is written to indicate an item that requires correction and/or closure prior to acceptance of the item. The red tag shall indicate the reason for tagging (specific HSR, CWR or NCR), the issuing body (the Fabricator, the Contractor, or the Department) and the date issued.

3.5. The issuing and placement of the red outstanding repair tag shall be the responsibility of the contractor's QC Department.

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4. Documentation Verification

4.1. The Contractor's Quality Control Manager is responsible for the verification of documentation.

4.2. Following receipt of the QA Approval form, the Contractor's QC Department shall conduct a document review process that shall insure the following:

- 4.2.1. All contract required nondestructive examination (NDE) has been performed and reported acceptable as part of the weld report submitted by the Fabricator.
- 4.2.2. All contract required visual inspections have been performed and reported as acceptable as part of the weld report submitted by the Fabricator.
- 4.2.3. All critical and non-critical weld repairs have been re-inspected and reported to be acceptable per the original inspection method.
- 4.2.4. All Heat Straightening Requests and Internal Heat Straightening Reports have been completed and the appropriate NDT performed and reported to be acceptable per the original inspection method.
- 4.2.5. All related Non-Conformance Reports (NCR's) issued by the Fabricator, the Contractor, or the Department for material and/or workmanship shall be closed.
- 4.2.6. All contract required dimensional inspections have been performed and reported as acceptable as part of the dimensional control / dimensional verification plan.
- 4.2.7. Following the document review process the contractor's QC shall notify the fabricator's QC of any omitted or missing reports, records or logs. Notification shall be submitted in writing.
- 4.2.8. Omitted reports, records and logs shall be submitted and accepted by the Contractor prior to proceeding with formal acceptance by the Department as described by section 5 of this procedure.
- 4.2.9. A Weld Summary Log shall be created for all welds represented by the approved QA Approval form.
- 4.2.10. Acceptable QA Approval forms shall be signed by the Contractor's QA Manager and attached to the Weld Summary Log representing the components listed and shall be retained.

5. Approval Request Notification

5.1. The Contractor shall initiate approval Request Notification.

5.2. The contractor's QC shall submit the following to the Department for Quality Assurance Acceptance as part of the Quality Assurance Acceptance Package.

- 5.2.1. QA approval form.
- 5.2.2. Welding Summary Log.
- 5.2.3. Dimensional verification reports (when applicable).

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SFOBB STATUS TAG			
<u>IN-PROCESS</u>			
SUBASSEMBLY _____			<div style="border: 1px solid black; padding: 5px; text-align: center;">Tag No.</div> <div style="border-bottom: 1px solid black; height: 20px; margin-top: 5px;"></div>
<u>INSPECTIONS</u>		<u>REPAIRS</u>	
FVT	ZPMC	ABF	CT
UT			
MT			
RT			
Dimen.			
<div style="border: 1px solid black; padding: 5px;"> Notes: </div>			

Figure 1. SFOBB Status Tag (In-Process, Yellow Tag)

SFOBB STATUS TAG	
<u>ACCEPT</u>	
Subassembly: _____	<div style="border: 1px solid black; padding: 5px; text-align: center;">Tag No.</div> <div style="border-bottom: 1px solid black; height: 20px; margin-top: 5px;"></div>
Grade: _____	
ABF QA. _____	
<div style="display: flex; justify-content: space-between;"> DATE: _____ </div>	
Final approval shall be based upon successful document review and official CT tagging	

Figure 2. SFOBB Status Tag (Accept, Green Tag)

SFOBB STATUS TAG	
<u>OUTSTANDING REPAIR</u>	
Subassembly: _____	<div style="border: 1px solid black; padding: 5px; text-align: center;">Tag No.</div> <div style="border-bottom: 1px solid black; height: 20px; margin-top: 5px;"></div>
Issued by: _____	
CWR <input type="checkbox"/> HSR <input type="checkbox"/> NCR <input type="checkbox"/> WRR <input type="checkbox"/> VT <input type="checkbox"/> MT <input type="checkbox"/> RT <input type="checkbox"/>	
QA: _____	Reports: _____ Report#: _____ DATE: _____

Figure 3. SFOBB Status Tag (Outstanding Repair, Red Tag)

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QA APPROVAL REQUEST FORM													
ATTACHMENT A													
Component _____	Date _____												
In-Process tag No. _____	Location _____												
<small>*Attach In-Process tag</small>													
Weld numbers _____													

ZPMC Team Representative _____	Date _____												
ABF Team Representative _____	Date _____												
CT Team Representative _____	Date _____												
DOCUMENTATION REVIEW													
	<table><thead><tr><th></th><th>Yes</th><th>No</th></tr></thead><tbody><tr><td>NDE complete</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>Repairs complete</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>NCR's closed</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr></tbody></table>		Yes	No	NDE complete	<input type="checkbox"/>	<input type="checkbox"/>	Repairs complete	<input type="checkbox"/>	<input type="checkbox"/>	NCR's closed	<input type="checkbox"/>	<input type="checkbox"/>
	Yes	No											
NDE complete	<input type="checkbox"/>	<input type="checkbox"/>											
Repairs complete	<input type="checkbox"/>	<input type="checkbox"/>											
NCR's closed	<input type="checkbox"/>	<input type="checkbox"/>											
ABF QA Manager _____	Date _____												
QA Approval Request form Rev 0													

Figure 4. QA Approval Request Form

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The following mutually agreed, all-inclusive monthly unit rates include straight time and overtime and constitute full compensation for the work, including all markups. The all-inclusive mutually agreed monthly unit rate will be paid for all staff that work 50% or more of the calendar days and are dedicated to the extra work described. The agreed unit prices are based on an exchange rate of 6.800 RMB/USD. No adjustment in compensation will be made for exchange rates that vary by less than 0.300 RMB/USD, i.e., between 6.500 RMB/USD and 7.100 RMB/USD. Should the exchange rate vary by more than 0.300 RMB/USD, a lump sum adjustment in compensation, increase or decrease, will be made at the end of the completion of the work described in this CCO. The adjustment will be based on the variations between 6.800 RMB/USD and the actual exchange rate paid in excess of 0.300 RMB/USD.

Description	Agreed Monthly Unit Rate in RMB's	Estimated* Monthly Unit Rate in USD	Estimated Man-months	Estimated Total
1. Data Processing & Input by Local Consultants	46,152	\$ 6,787	50	\$ 339,350
2. Data Processing & Input by Fabricator (ZPMC)	31,198	\$ 4,588	76	\$ 348,688
3. Data Collection & Green Tagging Inspectors	62,662	\$ 9,215	175	\$ 1,612,625
4. Contractor Inspectors and Oversight Personnel	NA	\$ 16,937	35	\$ 592,798
Total Est. Extra Work at Agreed Unit Price (6 Month Period)				\$ 2,893,461

The Contractor must submit a monthly log of the additional labor force dedicated for the implementation of this contract change order. The log shall include the individual's name, labor description category, and days worked. A representative of the Contractor and a representative of the Department shall sign the monthly log prior to submittal for payment. This extra work at agreed unit price has been estimated for a duration of six (6) months, agreed prices and estimated units will be reevaluated with issuance of supplemental change order at the Contractor or Departments request.

Estimated Extra Work at Agreed Unit Price \$ 2,893,461.00

Adjustment of Compensation at Agreed Lump Sum**QUALITY ASSURANCE DATABASE**

The Contractor shall provide web based Internet access capable of performing all task specified in this change order for use by the Contractor and Department personnel. The database shall be backed up off-site. The Department shall receive full access and use of the database. The Contractor shall implement the QA database for all information identified in this change order.

SOFTWARE AND HARDWARE

QA database hardware and software, including applicable licenses and annual maintenance renewal fees, shall be provided by the Contractor.

The Contractor shall submit, for approval by the Engineer, all software specifications the Contractor proposes to furnish. All database technical support and repair shall be performed by the Contractor. Software maintenance, including licensing and other fees shall be maintained for the duration of the change order. The Contractor shall instruct and assist the Engineer in the use of the software. Computer software shall remain the property of the Contractor and shall not be disabled until 30 days after the Contractor has received the final estimate, or as authorized by the Engineer.

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TRAINING

After approval of the database system by the Engineer, the Contractor shall provide an initial 8-hour training session to the Department in the use of the software.

The Contractor shall provide training sessions, at 4 hours per session. The Contractor can expect subsequent training sessions to be distributed throughout the duration of the change order until all 8 sessions have been completed, refer to Database System Cost Break-Down for quantity and units.

Each training session shall accommodate up to 12 Department Employees. Training sessions shall be at a location, date and time acceptable to the Engineer.

The Session Trainer shall be approved by the Engineer.

DATA DELIVERY REQUIREMENTS

All documents generated for the Department shall also be supplied in an Adobe (.pdf) file format that is generated digitally, not scanned.

PAYMENT

The agreed lump sum price paid for the database system shall include full compensation for furnishing all labor, material, tools, equipment, and incidentals, and for doing all the work involved in providing and maintaining the database system.

If the Contractor fails to complete any of the work in providing and maintaining the QA Database required by this section, the Engineer shall make an adjustment in compensation in conformance with the provisions in Section 4-1.03C, "Changes in Character of Work," of the Standard Specifications for the work not performed. Adjustments in compensation for QA Database will not be made for any increased or decreased work ordered by the Engineer in furnishing QA Database.

The agreed lump sum price paid shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved.

Agreed Lump sum payment resolves all prior cost related to this change and association with authority to proceed issued by the Department. For this work, the Contractor will be paid the Agreed Lump Sum of \$ 1,105,863.00; this sum constitutes full compensation, including markups, for this change.

Adjustment of Compensation at Agreed Lump Sum.....\$ 1,105,863.00

Estimated Cost: Increase ☒ Decrease ☐ \$3,999,324.00

By reason of this order the time of completion will be adjusted as follows: 0 days

Submitted by

Signature

Resident Engineer

Darryl Schram for Gary Pursell, Sup.T.E.

Date

12/4/08

Approval Recommended by

Signature

Supervising Transportation Engineer

Gary Pursell, Sup.T.E.

Date

12/4/08

Engineer Approval by

Signature

Principal Transportation Engineer

Peter Siegenthaler, Prin.T.E.

Date

12/8/08

We the undersigned contractor, have given careful consideration to the change proposed and agree, if this proposal is approved, that we will provide all equipment, furnish the materials, except as otherwise be noted above, and perform all services necessary for the work above specified, and will accept as full payment therefor the prices shown above.

NOTE: If you, the contractor, do not sign acceptance of this order, your attention is directed to the requirements of the specifications as to proceeding with the ordered work and filing a written protest within the time therein specified.

Contractor Acceptance by

Signature

(Print name and title)

Michael D Flowers
Project Director

Date

12-5-08